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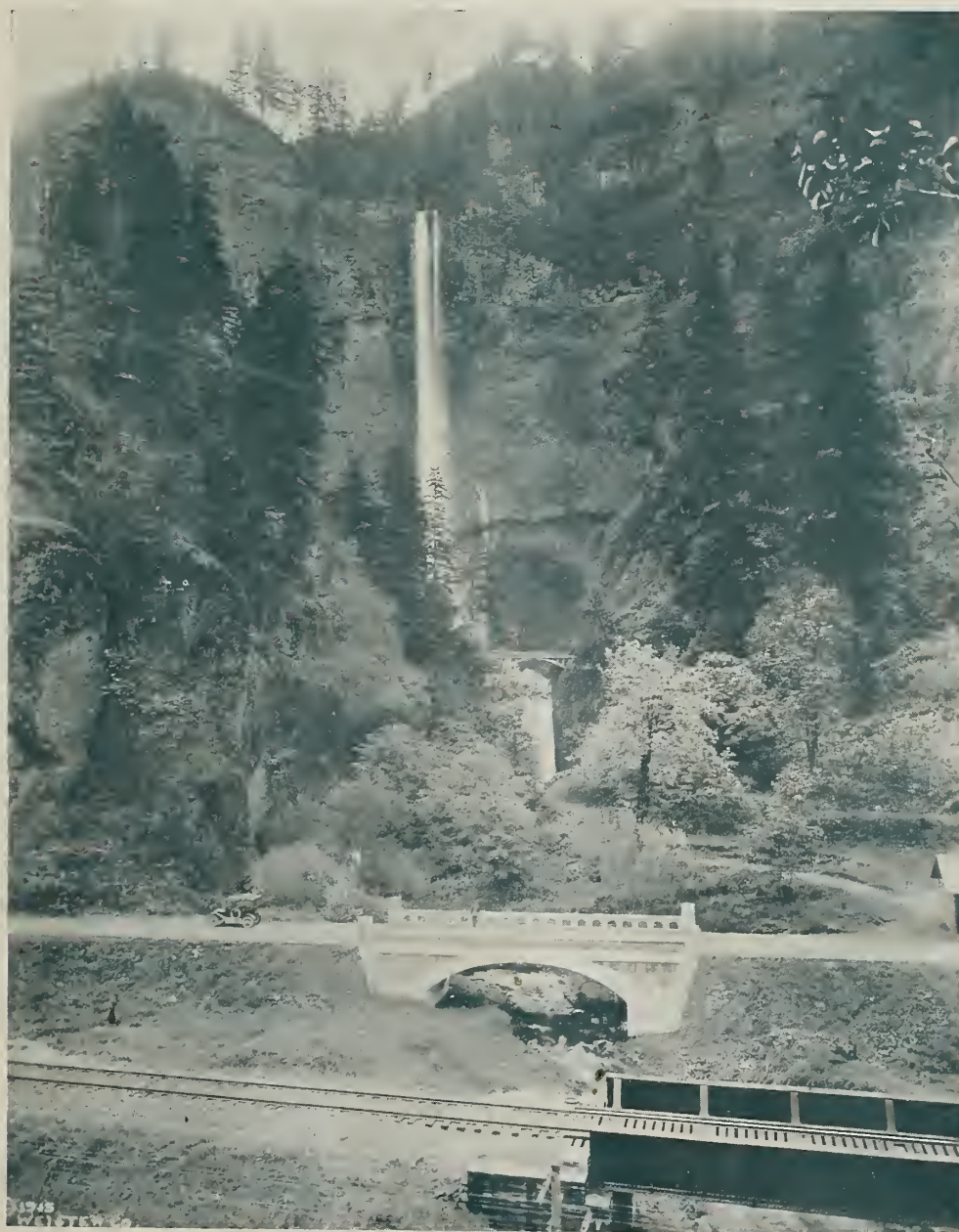
BETTER FRUIT

VOLUME XI

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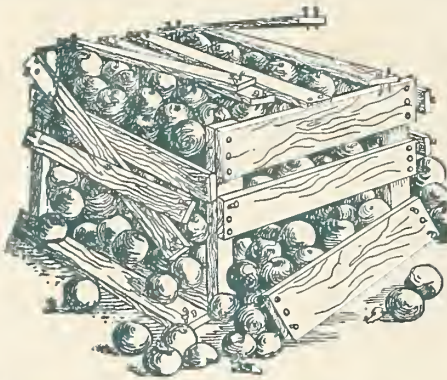
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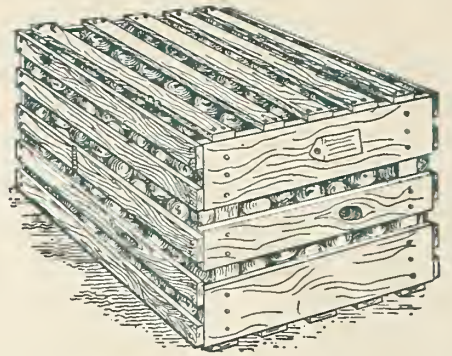
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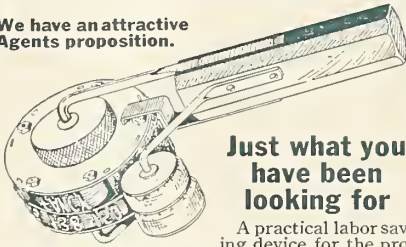
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BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

By-Laws of the Fruit Growers' Agency, Incorporated

Article I.—Name

Sec. 1. The name of this corporation shall be The Fruit Growers' Agency, Incorporated.

Article II.—Objects

This exchange is organized for the purpose of supervising the performance of a uniform contract which exists between the growers and their respective sales agencies, for the selling of the fruit products of the Pacific Northwest; to provide the means and facilities for carrying out the provisions contained in this contract as hereinafter set forth; to establish and maintain an "exchange" for the promotion of business and social relations among its members, and especially the advancement of the mutual interests of the fruitgrowers and fruit shippers of the Pacific Northwest, by all proper and legitimate methods; to collect and disseminate information; to secure improvements in transportation and storage services and conditions; to encourage competition by honorable methods only; to adjust by fair and equitable means grievances and differences; to correct trade evils and abuses; to prohibit all customs not in accordance with sound business principles; to secure the unification of contracts and accounting methods; to secure uniform methods in the physical handling, grading and packing of fruit from tree to car; to provide the necessary facilities for the extension and development of domestic and Canadian markets; to provide the necessary facilities for the promotion and conduct of export shipments and sales and work through joint agents and consignees for this purpose; to underwrite steamship charters and develop new fruit trade routes; to co-operate with federal agencies in such lines of work as they may undertake in behalf of the fruit industry; and to form and carry out plans for the mutual protection and benefit of its members in the harvesting, marketing and distribution of the Pacific Northwest fruit and produce crops.

To enable this corporation to carry out the purposes for which it is organized, it shall have the power:

1. To do all things necessary, proper and legal to carry out the purposes to its organization as above stated.

2. To buy, rent, lease, acquire and own such property, real or personal, as may be necessary for carrying on the business of the corporation and to sell, lease, mortgage, release and handle the same.

3. To aid in any manner any corporation or association organized for like purpose as this one, and to do any acts

and things necessary for the success thereof and to assist it in carrying out the purpose of its organization. To co-operate with and become a member of any state, interstate or national organization organized for the same general purpose as this.

4. To borrow money and secure the payment of the same by bond, mortgage, note, hypothecation or pledge of any property belonging to the corporation and to issue such promissory notes, bonds, debentures or other evidences of indebtedness as may be deemed necessary by the Board of Trustees, to meet and discharge its obligations, to advance and promote the lawful purpose of its creation.

5. To make and enter into contracts with its members, other persons, associations or corporations and to do any and all others acts and things necessary to carry out the purpose of its organization and which may be authorized by law, and to assist its members in every way practicable in the conduct of their business.

6. To sue and be sued.

Article III.—Membership and Dues

Sec. 1. (a) The membership of this corporation shall be composed exclusively of individuals, firms or corporations which are (1) growers, (2) growers' organization and (3) growers' selling agents who handle an average of one hundred or more cars of fruit and produce per year, and who are actually domiciled and do business in the States of Washington, Oregon, Idaho or Montana.

(b) There shall be two classes of membership, to-wit: (1) An active membership which carries with it the right to vote and hold office; (2) a qualified or passive membership which does not have the right to vote or to hold office.

(c) The annual fee for active membership shall be \$100.00, payable in advance. The annual fee for passive membership shall be \$5.00, payable in advance.

(d) Eligibility for membership: (1) Any growers' resident sales agent who is engaged in the actual sale and distribution of an average of not less than 100 cars of fruit or fruit and produce per year may become an active member only; (2) any grower whose average production is not less than one car per year and any growers' organization which handles an average of not less than one hundred cars of fruit or produce per year may become an active member. Any grower regardless of the amount of his annual production may become a qualified or passive member.

(e) Every applicant for membership, active or passive, shall agree and obligate himself to enter into and perform the uniform selling contract adopted by the corporation and to conduct his business in compliance with the by-laws and such rules and regulations as the corporation may from time to time make and promulgate.

(f) Such person, firm or corporation desiring to become an active or passive member of this corporation shall make application to the chairman of the membership committee in writing, accompanied by the membership fee and a general statement covering the applicant's financial responsibility, the length of time engaged in business, the character of his or its business, and references as to the business standing of the applicant. Such application and statement shall be presented to the membership committee as hereinafter provided.

(g) Members failing to pay their dues and assessments may be suspended or dropped from the roll at the discretion of the Board of Trustees, and shall thereupon forfeit the rights and privileges of membership in the corporation, but no member shall be expelled except by a two-thirds vote of the trustees, and no such expulsion shall act to relieve the member so expelled from liability for unpaid dues and assessments.

(h) The resignation of an active member shall not be accepted except upon four weeks' notice to the Executive Secretary in writing, and the payment of all dues and other obligations to the corporation, including those of the fiscal year, April 1 to March 31 (inclusive).

(i) After an active member has once been elected the fact that he shall in any one year fail to ship the requisite number of cars shall not ipso facto terminate his membership. However, if in two successive years he shall have failed to ship the requisite average number of cars per year, he may be dropped from membership upon the affirmative vote of two-thirds of the Board of Trustees.

(j) Any member guilty of conduct or business dealing prejudicial to the good name, standing or best interests of this organization, or who wilfully fails or refuses to perform any contractual obligation incident to membership, may be deemed unworthy of membership and expelled herefrom by a two-thirds vote of the active members of the Board of Trustees of this corporation; provided, however, that the accused shall first be given a fair and impartial hearing before the Board of Trustees.

(k) Expulsion shall deprive the expelled member from all his right, title and interest in and to all the property owned by the corporation, including its franchise.

Article IV.—Board of Trustees.

Sec. 1. The Board of Trustees of this corporation shall consist of not less than eleven voting members, five of whom shall be exclusively growers and five of whom shall be exclusively sales agents. The eleventh member of said board shall be elected from the active membership, and may be either a grower or a sales agent. Whenever it appears that the active voting member is a partnership, an association or corporation, the said partnership, association or corporation shall, if a partnership, select a member, if an association or a corporation, an officer and shall certify his name, and upon such certification the same member or officer shall be deemed eligible for the election to membership on the Board of Trustees.

Sec. 2. The Board of Trustees shall exercise the general powers of the corporation, and manage and control the affairs thereof. They may make rules not inconsistent with the laws of the United States, the state, or with the charter and by-laws of the corporation, for the guidance of the officers, and the management of its business. Demand from any officer of any of the books, papers, documents or records pertaining to the business of the corporation for examination or other purpose, may be made by the Board of Trustees at any time.

Sec. 3. Within thirty days after incorporation is perfected, at a meeting called for that purpose, the active members shall elect from its eligible membership eleven persons who shall compose the Board of Trustees.

Sec. 4. The term of office of the Board of Trustees shall be for the period of one year from the date of the annual meeting at which they are elected; or in the event of the omission or postponement of the annual meeting, until their successors are elected and have duly qualified.

Sec. 5. Should a vacancy occur on the Board of Trustees, the remaining members thereof, as soon as practicable thereafter, shall elect his successor to fill the unexpired term, said successor to be from the same geographical district in which the vacancy occurs.

Article V.—Officers

Sec. 1. The officers of the corporation shall be a President, Vice-President, Treasurer and Executive Secretary. The President must be a member of the Board of Trustees. The Executive Secretary shall not be a member of this corporation or of the Board of Trustees, nor shall he be affiliated with any individual, firm or corporation engaged in the marketing of fruit and produce. The President, Vice-President or Executive Secretary may also hold the office of treasurer.

Sec. 2. The trustees above named shall be elected by the active members at their annual meeting and shall hold office for a period of one year or until

their successors are elected and qualified. The officers above named shall be elected by the trustees from among their number at their annual meeting and shall hold office for a period of one year, or until their successors are qualified.

Sec. 3. Any officer may be suspended from office for neglect of or refusal to perform his duties, or for official misconduct, by a three-fourths vote of the Board of Trustees present at a regular meeting, or at a special meeting called for that purpose, provided that due notice thereof, with opportunity for hearing, shall have been given in writing to the delinquent at least twenty (20) days prior to said meeting.

Sec. 4. Officers, the Executive Committee, and the Board of Trustees shall be paid for the actual expenses incurred while attending meetings. If any officer or trustee render any special service for the corporation at the request or under the employment of the board, he shall be paid therefor such compensation as shall be determined by the Board of Trustees, and be reimbursed for necessary expenses incurred by him while engaged in such service.

Sec. 5. Any vacancy caused by the death, resignation or disqualification of any officer shall be filled by the Board of Trustees. In case of the temporary absence or disability of any officer, the board may appoint one of its members to act in his stead until his return or the disability is removed.

Article VI.—Duties of Officers

Sec. 1. The President shall preside at all meetings of the members and of the Board of Trustees. As the executive head of the corporation, he shall enforce its by-laws and execute the will of the members and of the Board of Trustees, and shall have general supervision and direction of the work of each officer and committee. He shall appoint, under the direction and subject to the approval of the Board of Trustees, all committees not otherwise provided for. He shall sign all instruments necessary to be executed under the seal of the corporation, and countersign all orders drawn upon the Treasurer.

Sec. 2. The Vice-President shall, in the absence or disability of the President, or upon his request perform the President's duties.

Sec. 3. The Treasurer shall receive and account for all money which shall

come into the possession of the corporation and disburse the same upon warrant of the Executive Secretary, countersigned by the President. The Treasurer shall furnish bond in such sum as may be required by the Board of Trustees, the expense of same to be paid by the corporation.

Sec. 4. The duties of the Executive Secretary shall be as follows: He shall keep full and accurate records of the transactions of the corporation, the Board of Trustees and its committees, conduct all correspondence relating to his department and issue warrants when countersigned by the President upon the Treasurer for such expenditures as are necessary in conducting the business of the corporation. He shall manage the affairs of the corporation and carry out the policies and instructions of the Board of Trustees. Subject to the approval of trustees, he shall have power to employ and dismiss all specialists, experts and agents, the services of whom may be required in conducting the affairs of the corporation. He also shall have power to employ and dismiss all necessary clerical and miscellaneous help. He shall be the custodian of the books, papers and records of the corporation and shall have power to make, under direction of and assuming that the Executive Secretary is the Treasurer, subject to the approval of the President and the Board of Trustees, any and all contracts for and in the name of the corporation. He shall give a satisfactory bond for the faithful performance of his duties, the amount of which bond shall be determined by the Board of Trustees and the expense of same paid by the corporation.

Continued in next issue

The New York Produce men will spend \$5000 to entertain the International Apple Shippers' Association members in New York City in August. Among the fruit dealers who are taking an important part in arranging the program are Messrs. E. N. Loomis, Joseph H. Steinhardt, W. H. French, C. W. Kimball, George W. Nix, P. F. Love and J. A. Melon. If any apple grower in the Northwest can spare enough money to pay his railroad fare to New York City, meals and entertainment will be plentiful. By the way, these meetings are the most business-like and the most instructive of any meeting conducted by any association in reference to the fruit industry.

Fruit Sizing Machines

The new "Francis Type" machine has solved the fruit sizing problem to a finer point of perfection than ever before.

It does very accurate work in sizing apples, peaches, pears, potatoes and tomatoes.

It has a great capacity and will not bruise. We are proud of this new development and you will quickly understand why when you have read our literature.

Send for illustrations and description at once.

Western Fruit Grader and Mfg. Co., Grand Junction, Colorado

The Tractor a Requirement for the Orchard

By C. M. Walker, Stockton, California

THE importance of cultivation in orchards cannot be emphasized too strongly, especially in those sections where it is essential that the moisture put into the soil by the winter rains should be conserved. Cultivating the soil destroys the weeds, which have millions of tiny tubes sucking up the moisture for their own use, and depriving the trees of it. It also preserves the soil mulch, a blanket of dust that covers the ends of the tiny capillary tubes formed in the soil, and prevents the moisture from rising through these tubes and evaporating into the open air. In many cases, orchard cultivation is neglected. In many others, it is unsatisfactorily or insufficiently done, owing to lack of proper tools or, more likely, lack of adequate power. The coming of the tractor has opened the way to the orchardist for frequent and thorough cultivation with a minimum expenditure of time and labor and, which is probably most important, a minimum of expense.

There are tractors on the market that are admirably adapted for orchard cultivation—narrow, low-down and short-turning—and these three are prime requisites of a tractor for orchard work. The tractor must be narrow enough to work between the most closely-set trees without danger of damage to the bark. It must be low enough to get under the low-hanging branches, and in this connection it is interesting to note that some of the tractors now offered for orchard work stand less than half as high as a horse. As for short turning, it is almost needless to say that to be successful in orchard work a tractor must be able to circle short, swinging from one row into the next without any difficult maneuvering or loss of time.

Granted that the orchardist uses care in his choice of a tractor, picking one that possesses the above qualifications and that is reliable and low in operating and upkeep costs, its possibilities are great. This, for example, is the experience of the Fargo Orchards Company of Portland, Oregon: "Our tractor has simplified our work at the orchard immensely. We find our average cost for plowing is seventy-seven cents per acre; for discing and spring-toothing, and for spiking and clod mashing sixty cents per acre. This is a big reduction over the horses, and saves us the trouble of handling a large number of men. Its main advantage has been its ability to do our work when we wanted it done, and the way we wanted it done. When the working season is over, the machine goes into its shed and we have no bother, trouble or expense until we take it out again in the spring. It has been a great pleasure to watch it working back and forth across the land during these hot days without a pause, while all about us our neighbors have been resting and blowing their horses at the end of every furrow."

This is just one typical example. Scores of similar ones can be found. Nor should the orchardist get the notion that the tractor's usefulness is limited to the work of cultivating. It is ideal for hauling fruit to market or bringing supplies to the ranch. Where teams tire and falter under the heat and long hours, the tractor goes on as long as the tractioneer is willing to work. And if he wishes, the tractor owner can find many opportunities for doing custom work in most communities—plowing, hauling, road grading, etc.—work that pays a good profit and keeps the tractor busy more days in the year.

A few years ago, the tractor was more or less of a mystery to many people. Today, thanks largely to the popularity

of the automobile, the gas engine is no longer considered a "fearful and wonderful thing." A man with as much intelligence as the orchardist would want the driver of his horses to possess, can operate and care for a tractor. The tractor manufacturers as a general rule provide complete instructions for the care and operation of the machines they build; also, in most cases, they provide an expert operator to unload and start the machine and instruct the purchaser. A few manufacturers even go so far as to hold schools in which owners or prospective purchasers can learn to become expert tractioneers. Service—not only the service in a machine but the service behind it—has become an important feature of the tractor industry today, insuring the purchaser's satisfaction and success with his machine.

The Standardization of Fruit Products

By C. A. Tonneson, Tacoma, Editor Northwest Horticulturist and Dairyman

THE production of fruit, including its manufacture into the various finished forms, is known by the term industry. The distribution, disposition or sale is strictly a business proposition. Those engaged in the business of selling invariably require from those devoting their attention to industry that the articles delivered to sell shall be of some standard form. Failure in this particular is, perhaps, one of the greatest causes of loss and dissatisfaction known both to growers and merchants. Those handling the business part say that buyers in the markets are exacting and discriminating, and that competition is keen on account of the great variety of fruits received from various other avenues and districts. About the only way the man who devotes his attention to industry can fully realize the importance of standardization is to see his product or goods in such form as he chooses to deliver them from the selling standpoint. In concluding the United States Farmers' Bulletin on the Distribution of Fruits and Vegetables on Large Markets, Charles J. Brand, chief of that bureau, states that one of the most practical steps the shipper can take to better his condition is to familiarize himself with business practices and secure a better knowledge of the way his produce is handled on the markets.

Considerable progress is being made in the standardization of fruits and fruit products, and of the methods employed in the Northwest. The grower who gets the market viewpoint of a standard pack of apples or pears, which includes uniform size, good color, sound fruit in a neat package, figures far enough back to include good tillage, pruning to open heads in the Coast section, spraying for scab and brown rot, and if the cost of production cannot be kept low enough to afford some fair margin of profit when figured on the average market price, then it is evident some other form of a standard product for these fruits must be undertaken or the project aban-

doned, for to offer fruits when not measuring up to market requirements is both demoralizing and unprofitable.

Let us look at our commercial fruit industry in the coast section of Washington from the marketing standpoint. Speaking only of the apples offered in properly standardized form there are but few varieties grown which, during the past five years, have been sold at prices to return some fair measure of profit to the growers. Among them may be mentioned Yellow Transparent, Duchess, Gravensteins, Wealthy, King and to a limited extent the Spitzenberg, also Golden Glow and Rome Beauty, and for future commercial markets perhaps the most promising is the Gravenstein. What shall we do with our many other varieties? Why not look into the dried fruit markets? The price to growers today is from 10 to 11 cents for sliced, cored and evaporated apples. A leading apple grower in one of the fruit-growing states east figured a net profit of about 20 cents per bushel at that price. He first took advantage of a satisfactory fresh-fruit market, then dried the balance of his crop, drying separately also the peelings and cores, which was sold for stock feed. There is a prospective growing market for dried apples in Alaska, in South America, and to some extent in Europe. Let us watch these closely through the United States Department of Commerce and through our leading exporting merchants from this Coast. In the marketing of fall pears which will carry well, particularly the Anjou, the experiments so far are very promising. If we can establish a trade for three or four of these fall varieties then it will not be difficult to adhere to required standards of the markets.

It is through the bush fruits that Western Washington is making some satisfactory degree of progress commercially at the present time. The berries are all naturally superb and the methods of handling these in fresh form are well up to standard requirements of the markets in which they are

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PORTLAND, E. SHELLEY MORGAN, MANAGER. OREGON.

sold. To reach the more distant markets and to further develop all markets, however, we must do more canning, make more soda-fountain fruit juices, more jams, jellies, fruit butters, sherbets, raspberry cider, unfermented grape juice, blackberry cordial, loganberry juice, make use of the strawberry whenever its flavor is desired.

The national and the state pure-food laws have been of inestimable value to the fruitgrowers of this part of the state. The markets are developing with wonderful rapidity for the unfermented juices of the loganberry, red raspberry and the grape. To standardize these as to quality and size of package and sell through regular market channels at prices satisfactory both to producers and consumers is the problem. Can the loganberry, red raspberry, strawberry and grape growers press out sufficient number of gallons of juice per acre and put it in standard form with sufficient profit margin to cover cost

of sale and further advertising, then a tremendous industry is assured.

Italian prunes are now pitted and canned in about a ten-per-cent syrup and put out under an Oregon brand, a standard article said to be moving well in the market. A few years ago it was the custom to use a forty-per-cent syrup with prunes. A better article is now put up at less expense. The same principle applies to other fruits and to juices. The chemists and processors have discovered that the simple matter of sterilizing the containers the second time at from 24 to 36 hours after the first, that the bacteria developing ferments is under better control than if more sugar had been used and sterilized but once. The same principle applied to the different berry juices. These products can be condensed, boiled down if need be and a much less proportion of sugar used in preservation than was formerly considered necessary and was the general practice.



The Experiment Stations are doing some wonderful work for the benefit of the farmer and fruit grower, showing the value of modern methods of efficiency, economy and productiveness. The above scene shows the Experiment Station at Purdue, Indiana, putting the ground in thorough state of tilth with an Acme harrow.

Here is opportunity for service. Let us have a committee appointed to get at every phase of the selling requirements for standardization, eliminate all unnecessary expenses, but adhere strictly to rules by which those representing the industry of production and those having charge of the business of selling can meet with some measure of satisfaction to them and to the ever-increasing consumer.

The Ozark strawberry crop is estimated at 2300 cars. One hundred cars from any district in the Northwest looks pretty big. Apparently the Ozark strawberry growers do not fear over-production, in strawberries at least.

Lieut. Bryan, U.S.N. stated before the Am.Soc.of Naval Engineers: "Oils made from the asphalt-base crudes have shown themselves to be much better adapted to motor cylinders, as far as their carbon-forming proclivities are concerned, than are paraffine-base Pennsylvania oils."

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Drawn from actual photo.—Note marked difference in growth between tree planted in blasted hole and tree planted in spade-dug hole.

or by opening seepage channels into the hard soil through which the stagnant surface water can sink into the subsoil.

Relief from excessive surface water, which causes bad soil sanitation, is obtained by blasting ditches. This is a quick and economical method.

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Economical Use of Irrigation Water

[Office of Information, U. S. Department of Agriculture]

UNDER conditions such as prevail in Idaho on a normal project with medium clay loam, irrigated land should be supplied with sufficient water during the season to enable each irrigated acre to retain two feet, according to a recent investigation of the United States Department of Agriculture. This applies, it is said, to at least 75 per cent of the irrigation projects in Idaho and probably to as large a per cent of the projects in other states. In order that the land may retain the needed 2 feet of water per acre, the former should receive about 2¼ feet on medium clay and sandy loam soils. Where the soil is porous or has a porous subsoil lying closer to the surface than 6 feet, more than this quantity of water should be delivered to the consumer, the exact quantity depending, of course, upon the porosity of the soil. Where an Idaho project is devoted one-half to grain and the other half to alfalfa or other crops, the total volume of water should be distributed something as follows: 18.7 per cent during May, 28 per cent during June, 32.8 per cent during July, 17.2 per cent during August and 2 per cent during the first half of September.

After this time the only demand for water is for live stock and domestic purposes.

These conclusions, which are based upon co-operative experiments conducted by the United States Department of Agriculture and the State Land Board of Idaho, are reported in a new Professional Paper, No. 339, of the United States Department of Agriculture, entitled "Experiments on the Economic Use of Irrigation Water in Idaho," by Don H. Bark. During the course of this investigation the water was measured upon 529 individual tracts covering a total area of slightly over 3,600 acres. The land was used for staple crops, alfalfa, clover pasture, spring and winter grains, potatoes and orchards.

Experiments show that the yield of grain on the heavier soils such as clay, clay loam, sandy loam and fine sand, will normally increase with the supply of water until an amount varying between 1.4 and 1.8-acre feet has been applied. After this the application of more water will decrease the yield of grain and in many cases the yield of straw as well. Alfalfa requires larger

quantities of water and the experiments did not reach a point at which an increased supply began to lessen the yield. If the yield alone is considered it is difficult, it is said, to apply too much water to alfalfa, provided no more is applied at one time than the soil will promptly absorb. With both grain and alfalfa, however, the amount of water that it is profitable, from a business point of view, to use depends upon the relative cost of land and of water and other local economic conditions.

With potatoes, it is found that there is a strong tendency for the yield to increase with the supply of water. The rate of increase, however, grew smaller as the quantity of water was increased, and on clay-loam soils it probably will not be advisable to apply more than 2 or 2½ feet per acre to the crop.

The report also deals with the question of the proper quantity of water to apply at each irrigation. An unavoidable loss from evaporation invariably occurs during and immediately after irrigation and it is, therefore, desirable to have no more applications during the season than are required to maintain the needed moisture content in the soil. Investigators found that from 3 to 6 acre inches at one application is the correct quantity. Impervious soils should be so manipulated that they will absorb the smaller amount at least, while on the porous soils large irrigation heads should be used. On these porous soils very little can be accomplished with small heads of water because the water is absorbed so rapidly that it cannot be forced over the field. The average size of the irrigation head over the greater part of Idaho seldom exceeds 1 to 2 second feet. On the porous soils, the use of heads three or four times this size, it is said, will give a much higher efficiency.

In conclusion, the report points out that the determination of the proper supply of water for an irrigation project is a very serious problem. If too little water is allotted, the yields will be small and the lands never will reach their highest possible value. On the other hand, if too much is allotted, the excess supply is almost invariably used and the irrigated lands may deteriorate rapidly through waterlogging. Moreover, the water is diverted from use elsewhere and the ultimate area of irrigated land thus reduced. In determining the amount of water to be used, other factors than the maximum yield must also be taken into consideration. The cost of the land, the cost of the water, and the value of the crops produced are all important considerations. There are but few cases in which the increase in yield is proportionate to the quantity of water used.

The Hood River Apple Growers' Association, through their sales manager, Mr. Wilmer Sieg, reports the entire cherry crop of 1916 has been sold.

The North Carolina fruit crops were damaged by cold weather and frost during the month of April.



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Sweet Clover a Strong Nitrogen Gatherer

By F. B. Linfield, Bozeman, Montana

THERE are many varieties of sweet clover, but only two are common in our Northern country, the white (*Melilotus alba*) and the yellow (*Melilotus officinalis*). Both are biennial plants. The white variety is preferred as a crop. A study of the characteristics of this plant shows its wonderful adaptability to a great variety of conditions. It is a very vigorous and rapid grower, attaining a height of 5 to 10 feet. Extreme of heat or cold does not seem to affect the plant. It grows well in the extreme South and all the way between up to and including Montana, where it grows well in nearly every part of the state. It can withstand very great extremes of wet or dry soils and it will grow on stronger alkali soil than any other farm crop. In fact it has considerable renovating power when grown on such soils. It will also grow better on very poor soils than any other leguminous plant, but to do its best the soil should be rich in lime. A peculiarity of the plant is that it needs a very firm seed bed. It will even start on hard, compact soil if moisture is available. It does not germinate readily or grow well on loose, open soils. Sweet clover is a strong nitrogen gatherer, the roots being loaded with nodules even on poor soil. It is, thus, a great soil enricher. Some soils need inoculation, but this is not commonly the case in Montana.

As the plant is a biennial, it does not grow very high the first year, but stores up a large food supply in its fleshy roots. The second season it develops to its full height, and if permitted to do so matures a heavy crop of seed. At the end of the second season the plant dies; the roots, thus, adding much

humus to the soil. As a rule the seeds are slow to germinate, as there are many hard-coated seeds. Probably not more than half the seeds will germinate the first season. This means a little thicker seeding than for alfalfa, say, 12 to 15 pounds per acre. In the dryer sections of the state, on the bench lands, the crop may be seeded in rows, 24 to 36 inches apart, when 3 to 5 pounds of seed per acre will be plenty.

Sweet clover produces a very fine quality of honey, and as it flowers profusely and continuously through the season it provides a large quantity of honey for the honey bee.

Compared with alfalfa, sweet clover is a stronger grower and a much larger plant. It is richer also in protein, when cut in early bloom, which is the best time for making hay. It is not to be recommended as taking the place of alfalfa or red clover where these do well. Sweet clover is such a vigorous grower that to many farmers it appears to be a weed. However, it seems to grow mainly in waste places only, and does not usually trouble the cultivated fields. It is not readily eaten by stock because of its bitter taste, and they have to be starved to it at times. Once they learn to eat it, however, they seem to relish it as well as they do alfalfa. It is valuable as a fodder crop only in its early stages of growth, as after it is in full bloom it gets very woody and the leaves fall.

The crop should be seeded in spring on a firm seed bed. Fall-plowed land, or land that has had a cultivated crop the year before, is to be preferred. Spring-plowed land should be very firmly packed before seeding to sweet clover.

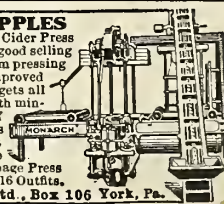
Probably the greatest value of sweet clover is as pasture. It should have a good start in the spring and then enough stock kept on the field to prevent it from gaining on them. If it should get ahead of the stock the crop should be mowed down. The plant is an early grower in the spring, so that it will make one of the earliest pastures. Another advantage is that it very seldom or never bloats stock, whereas there is always more or less danger with alfalfa. All classes of livestock do well on sweet clover pasture, but hogs especially so. When used for hay, cut the crop when the first few blooms appear. It should be cut about four inches above the ground, as unlike alfalfa, the second crop grows from low branches and not from the crown. Thus, if the crop is cut so close to the ground as to remove the branches the next crop is very much reduced. In the moister parts of Montana the first crop may be cut for hay and the second left for seed. At the present time there is good money in the seed crop. As sweet clover is a biennial plant, provision should be made that it reseeds itself. If pastured or cut too close no seed will be formed, so the plant will disappear after the second year.

The characteristics of the sweet clover as given above shows its adaptability for the orchard. Its deep tap root, which dies at the end of the second year, adds nitrogen and humus to the soil and also opens up the soil to the action of the air. As the plant is a vigorous grower and accumulates a large store of nitrogen it makes a good green manure for plowing under. Unlike alfalfa, it is a plant comparatively easy to get rid of by summer cultivation. It is a short rotation, nitrogen-gathering plant.

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Picking and Packing of Cherries and Prunes

THE importance of careful picking and handling in preventing decay in such fruits as cherries and prunes is brought out in Department Bulletin 331, which contains a report of experiments conducted with these fruits in the Willamette Valley, Oregon. Hitherto it has not usually been found profitable to ship fresh cherries and prunes from this region to distant markets because of the unsatisfactory condition in which the products arrive. These investigations demonstrate that a great part of the decay can be prevented by the exercise of proper care, but that unless care is exercised there is little hope of disposing of the fresh cherry and prune crop of this region in distant markets. The facts brought out in the investigation are believed to be applicable also to other sections of the country.

The losses which shippers of cherries and prunes experience are due chiefly to brown rot and to other fungi which gain entrance through abrasions in the skin, or other injuries to the fruit. The brown rot must be controlled by proper orchard practice. On the other hand, the loss from those forms of fungi which do not attack healthy, sound fruit can be minimized by careful handling.

In order to demonstrate this fact the investigators stored various lots of carefully handled fruit and of commercially handled fruit for varying periods in a refrigerator car, in which the conditions were made as nearly as possible identical with those under which the fruit would travel in actual commercial practice. At the end of five days, in the iced car, the carefully handled fruit showed an average of only 0.5 per cent decay, while the commercially

handled fruit showed 2.8 per cent of decay, or practically six times the amount. At the end of ten days the carefully handled fruit had 1.5 per cent of decay and the commercially handled lots 12.3 per cent, or eight times as much. Ten days is approximately the time required to ship fruit from the Willamette Valley to Chicago.

Similar results were obtained from experiments with prunes, although with them the percentage of decay for both commercially handled and carefully handled fruit was smaller than with cherries. It is pointed out, however, that although every effort was made to have the conditions approximate those in actual transportation, it is probable that the fruit kept better in the iced car used for these tests than it would in the ordinary refrigerator car in transit.

Experiments were also conducted both with carefully handled and commercially handled fruit to determine the value of precooling before placing the fruit in the refrigerator car. These tests show that precooling is undoubtedly of value. On the other hand, it cannot be relied upon to prevent losses due to careless handling. Injured fruit will decay whether it is precooled or not, and for this reason precooling is not recommended unless it is preceded by adequate care in picking and packing.

It is also pointed out that any delay between the picking and the shipping of fruit hastens decay. The amount of damage done in this way will vary, of course, with the weather conditions, but under any circumstances it is considerable.

In view of these facts, it is recommended that every precaution should be taken in picking the fruit not to bruise it, and that it should be transferred as few times as possible from one container into another. While it is being held in the orchard after picking it should be kept in the shade, and the hauling wagon should be provided with good springs and covered with canvas in order to keep off sun and dirt. In grading, all damaged fruit should be culled out, and as soon as the shipment has been packed it should be placed in the refrigerator car.

The extra expense of careful handling, it is said, will be more than offset by the reduction of losses from decay and the ability of the fruit to maintain itself in good condition while exposed


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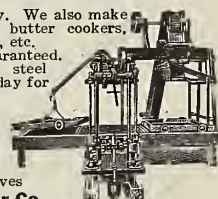
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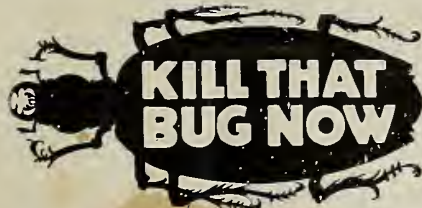
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for sale. If these suggestions are adopted generally by fruitgrowers and in consequence a larger proportion of the crop marketed fresh, it is believed that the industry will benefit greatly and its extension will be made profitable. That this fact is being recognized by fruitgrowers is indicated by the co-operation afforded the department in its investigation by the growers in the Willamette Valley.



DO it before it ruins your crop prospects. Timely spraying will kill off the destructive insects—banish the blights. Spraying pays. Save money on your spraying outfit, too. We can save you one-quarter to one-half on any kind of sprayer, hand or power. Look at this one, for instance—

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For various kinds of spraying—orchards, vineyards, shrubbery or for whitewashing dairies, poultry houses, etc. Double acting—brass nozzles—brass cylinder—brass valves—brass valve seat—paddle agitator. Furnished with 5-foot hose. Built to last for years—guaranteed to give satisfaction.

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HOOD RIVER, OREGON

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All Communications Should Be Addressed and Remittances
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ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906, at the
Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879.

The Fruit Growers' Agency, Incorporated.—The Fruit Growers' Agency has made splendid progress, asserting it now controls about 75 per cent of the tonnage. Great credit is due the government officials, Messrs. Bassett, Moormaw and Kerr, and to Captain Weyrauch, the president, who have worked unceasingly and untiringly. The Agency will render market service similar to the service rendered on strawberries and peaches, which has proved very beneficial to selling concerns. Therefore it is not entirely experimental, as many people imagine. However, the Agency will cover a much broader field, doing much more than rendering a service on market information. The Agency has been endorsed by the government, by our governors and Experiment Station men, bankers and business men very generally. The cost will not exceed one dollar per car, which will be about one-sixth of a cent per box. It does not seem that something that is so well recommended should be passed up when the cost is so small an item. The fruit industry needs the good will of everybody. It needs the good will of those who have endorsed the Fruit Growers' Agency. To refuse to join would incur the displeasure of those who have recommended the Agency. It does not seem that any grower can afford to do this when the cost will be so small. It is the general, almost the universal opinion, that the Fruit Growers' Agency will be a success. A year's time will show its value. The cost is small. It is the opinion of the officials, and those who have worked most in behalf of the Agency, that after a year's time nobody will want to get out, but that everybody will want to get in. With the endorsements given the Fruit Growers' Agency it seems that the fruitgrowers would act wisely in giving it the fullest support possible in order that

the Agency may have the fullest opportunity to accomplish the greatest amount of good. If this is done, those who have given the matter the most attention believe it will prove a success, and that the fruitgrowers will be helped and enabled to obtain better prices. That is what they all want.

Apple Estimates for the Northwest.—

Early this spring fruitgrowers throughout the Northwest were all commenting upon the wonderful amount of spurs and fruit buds and prophesying a bumper crop. There was no question about it. The trees were full of spurs—the spurs were full of buds, great big ones, bigger than ever before. Then came blooming time. The orchards looked like snow banks. Every fruit-grower figured, if apples brought good prices, he would be a millionaire. This wonderful crop that was prophesied in the bloom has been greatly diminished. Several fruit sections in the Northwest suffered from frost damage all the way from 20 per cent, some estimating the loss as high as 100 per cent. In addition to the frost damage there was a shedding after blooming that was fierce. Nearly all trees shed not only many clusters, but the balance of clusters to one in a cluster. This was followed by a continuous dropping during the month of June. At the present time the apples are still small, about the size of marbles, and green, like the color of the leaves, scattering over the trees in varying quantities, with very few orchards heavy. So it is almost an impossible proposition for a grower to even estimate his own individual crop. The above condition is illustrated by the way one grower expressed himself. During the blooming time he estimated his crop at 15,000 boxes; after shedding he estimated his crop between 10,000 and 12,000 boxes; after the June drop between 8,000 and 9,000 boxes. While it is too early to make any definite

statement, there are many who do not figure the 1916 crop of Oregon, Washington, Idaho and Montana will exceed very much, if any, the crop of 1915. In all probability there will be more apples in 1916 than in 1915, but the bumper crop that we were going to have when the estimates were given out in blooming time has faded away. About August first pretty reliable information can be furnished as to the size of the crop, but not very much sooner.

Spraying for Fungus.—Never before

in the past in the Northwest have the fruitgrowers sprayed more thoroughly for codling moth and fungus than they have this year. It is too early to tell anything about the damage from codling moth, but the results obtained in preventing scab was something phenomenal. The crop will be clean. The general plan of spraying for the prevention of scab was pretty well established by previous years' experience, consequently nearly all growers in districts troubled with scab used the proper fungicides at the right time, getting splendid results. However, there was much doubt about the advisability of using a fungicide with arsenate of lead in the second codling-moth spray, which is usually put on in June, for the reason at this time the weather is very warm and fungicides, particularly those containing sulphur, are apt to burn. Bordeaux is also apt to burn at this time of the year when the fuzz is still on the apple, especially if followed by rain. It remains to be determined whether it is advisable to apply a fungicide in this spray or omit it. This year when the weather turned warm a burning occurred from the sulphur fungicide. A great many orchardists who had kept their orchards free from scab by previous sprays omitted the fungicide. These had no burning. It remains to be seen whether scab will develop in these orchards later in the

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season. If it does, then in future years the grower will have to determine which is the greater loss, from scab or the loss from the burning. However, it is believed that if the grower has been successful in keeping his orchard free from scab by previous sprays that it may not be necessary to use a fungicide in the second codling-moth spray.

The Stephens Bill.—The Stephens Bill before Congress is a bill for price maintenance and to prevent price cutting. There is nothing that injures any business more than unnecessary and serious price cutting. It applies to the fruitgrower as well as any other kind of business. Those who have investigated the Stephens Bill fully believe it will be a big factor in stabilizing business and maintaining just prices. It has received strong endorsements; therefore it is believed that every man in business, including the fruitgrower, will be benefited by this bill, consequently it is entitled to support. Letters from Congressmen from the Northwest indicate they have investigated the bill and believe it a good one. Other Congressmen, who have not investigated the bill, say they will give it immediate consideration. So it is to be hoped that everybody will familiarize themselves with the Stephens Bill, and it is believed they will find it a desirable bill. If they do, it is everybody's duty to support it.

Strawberries in the Northwest.—For the first year in the strawberry business of the Northwest it may be said that the strawberry crop has been handled under more orderly control than ever before. As a result splendid prices are being received. Orderly control, intelligent distribution and elimination of self-competition are the necessary factors in obtaining market values for any kind of fruit. The strawberry situation has proved this in a very definite and positive sort of way, so that no one can question that other kinds of fruit will be equally benefited if marketed in the same orderly, intelligent way, and properly distributed.

Cherries.—A number of new canneries have been opened up in the Northwest during the last two or three years. In every district where there is a cannery Royal Ann cherries have brought good prices. A few years ago the grower considered himself lucky to get three or four cents a pound for cherries. Since the introduction of canneries markets for fresh cherries have not been glutted, the grower having the option of either shipping fresh or selling to the cannery, resulting in cherry growers being able usually to obtain about five cents per pound for Royal Anns.

The strawberry reports being rendered daily by the Office of Markets, Department of Agriculture, are being found very valuable and very helpful to all shipping organizations. Each report rendered contains valuable information to the shipper about the marketing conditions in each city; for

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—when you use Mica Axle Grease. The grease is always evenly spread and it *lasts*. Mica Axle Grease would still be good grease even if it contained no powdered mica. But the mica makes it even better. Gives extra lubrication—forms a smoother surface—makes the grease last twice as long. Get a can from your dealer today.

Standard Oil Company
(California)

MICA AXLE GREASE



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ESTABLISHED 1859
Portland, Oregon

Comparatively Speaking

The checking account is as important a factor in the systematic management of household affairs as it is in the well-organized business. Paying by check is the advantageous, polite way. It reflects one's ability to do things. Indicate your estimation of all this by paying by check. It will be to your convenience, satisfaction and profit. This strong bank, oldest in the Northwest, respectfully invites your checking and savings accounts.

instance, from the sheet of June 17th, the report is as follows: "Minneapolis, cold, cloudy. Iowa five cars, Illinois one car arrived, seven cars held over, demand moderate, quality fair, soft, best 24 quarts \$2.50 to \$3; 16 quarts \$1.50 to \$1.75." In the same report is included similar statements from the following cities: Boston, Buffalo, Chicago, Cincinnati, Cleveland, Columbus, Des Moines, Detroit, Indianapolis, Kansas City, Milwaukee, New York, Omaha,

Philadelphia, Pittsburg, St. Louis, Sioux City, Washington. It would be well worth while for every grower when he visits his shipping association to ask to see one of these reports. By looking it over the grower will get an idea of the valuable service the government is rendering on strawberries this year, which is similar to the service they will render on peaches during the peach-shipping season, and on apples during the apple-shipping season.



"Wenatchee" Fruit and Vegetable Picking Bags

(Patented April 27, 1915)

This bag is emptied by releasing a snap. The bag will hold about a bushel. When snapped at the frame it will hold about a half bushel. The frame is made of steel, the canvas is 10-oz. and every point is reinforced with leather where from experience it has been found necessary. **Price \$1.75 post paid** to all parts of the United States where we have no agents.

Wenatchee Hardware Company
Sole Manufacturers Wenatchee, Wash.

Arcadia Irrigated Orchards

THE LARGEST AND MOST SUCCESSFUL ORCHARD PROJECT
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7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

SEND FOR BOOKLET

Arcadia Orchards Company

Deer Park, Washington



Paint Large Pruning Cuts

By J. B. Hundley, Yucaipa, California

IN nearly all of the old orchards we see many large trees which should be in their prime, but unfortunately nearly dead. If the pruning cuts of years ago had been properly cared for many of these trees would now be yielding large crops. A closer exami-

nation will show the hearts of the large limbs and even the trunks decaying. This is caused by a rot fungi which enters through large cuts left unprotected from the weather.

Every book on the culture of the apple, pear or other deciduous tree rec-

ommends the painting of all large wounds. The main difference among authorities is in the time of application and the material used. There are some very good men who recommend painting as soon as the cut is made. It is because many have followed this and have seen the effects that we hear so much talk of the evils of painting, and see examples on every hand of trees with large unhealed cuts left unprotected. If the owners of these trees would visit some nearby old orchard and notice the number of limbs and trunks with the hearts rotting out, I believe more interest would be shown in protecting our orchards from such conditions.

If a cut is painted at once after pruning the sap will be held on the surface and will sour, often running from the wound and killing the bark for inches down. Of course this is worse than if the wound had not been painted. However, if the cut had been left exposed to the air for a few months the wood would have become hardened by exposure and could safely have been painted without danger of the above mentioned undesirable result. This later painting will prevent any dry rot fungi from entering the limb. It seems most desirable to paint all cuts larger than a quarter in May or June, as by this time the wood is hard and as yet has not started to decay.

In painting pruned cuts it is not best to use a material that will become hard and chip off with the growth of the tree; for this reason never use white lead or paint. They are too temporary. Grafting wax is probably the best material to use. Roofing compound, asphaltum or even paraffine may be used quite successfully. In painting do not apply the wax or other material too thickly. All that is necessary is a thin film to keep the air from the wood. If it is put on too thick very often in the heat of summer it will run, injuring the bark.

The following is an excellent formula for grafting wax: Resin, 6 pounds; beeswax, 1 pound; linseed oil, 1 pint. Melt together and apply at a temperature of 180 degrees.

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Send me your name and address right NOW and I will send you **INVESTING FOR PROFIT** magazine absolutely free for six months. It tells how to get the utmost earnings from your money—how to tell good investments—how to pick the most profitable of sound investments. It reveals how capitalists make \$1,000 grow to \$22,000—in fact gives you the vital investing information that should enable you to make your money grow proportionately. I have decided this month to give 500 six-months subscriptions to **INVESTING FOR PROFIT** free. Every copy is

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Our PATENTED EL FLO outfits are the ORIGINAL instantaneous sterilizers. Different from the wash boilers generally sold for canners at higher prices. We are PATENTEES of the only SELF HEATING CAN SEALING DEVICE on the market. With our combination, children are successful and pile up bank accounts and cut the family living expense. Everything for canning. Catalog free. Address nearest office. **Home Canner Mfg. Co.** Alexandria, Minn.

Oregon's Dairy Products Worth \$18,000,000

There are no dull periods in the dairy business. The weekly cream check insures regular profits the year around.

Dairying is one of the best side lines for a fruit-grower. The right start is a few good cows and an

INDIANA SILO



Silage furnishes the most economical and succulent feed for dairy cattle. And the most economical silo is the "Indiana."

FREE

Our new Silo Book sent free to readers of "Better Fruit." A postal will do.

Built on the Pacific Coast by
The Chas. K. Spaulding Logging Co.
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The Paris Fair

HOOD RIVER'S LARGEST
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EVERYTHING TO WEAR

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Fruit Sizing Machines

Highest award at Panama Exposition, San Francisco.
Three years successful operation.

The 1916 Sizers and Sorters greatly improved. Prices much reduced

We make four kinds.
Write for catalog.

Price Fruit Sizer Co.
North Yakima, Wash.

Overheating Often Attributable Faulty Ignition

A pamphlet just issued by the Standard Oil Company, entitled "Engine Overheating, Mechanical Bulletin No. 3," throws considerable light on the problem of overheating of automobile motors. This bulletin says in part:

"One of the common causes of overheating is due to ignition. A late spark overheats the motor; the charge is ignited after the piston has started downward on the power stroke; consequently the hot gases are not expelled from the cylinder before the second charge is fired. This will continue until the cylinders become so hot that pre-ignition will take place. That is, the gas will ignite before the piston has reached the correct point, resulting in what is known as a 'spark knock.' By advancing the spark lever on the quadrant, the mixture is ignited before the piston has reached top center, so that when the piston does reach the center and starts down, the expansion of the gases is complete, and they are exhausted at a comparatively low temperature. Missing of one or more cylinders has a tendency to overheat the motor, as the fresh gas is taken into the missing cylinder and ignited by the outgoing charge from the working cylinder, which causes muffler explosions and back pressure on the cylinder which are working. The right kind of lubricating oil is a great help in keeping the motor cool, and many of the leading automobile engineers and motor experts say that oil made from Western asphalt-base crude has less tendency to break down under cylinder heat than oil made from other crudes, and is, therefore, a more efficient aid in keeping the motor cool."

Exchange Secures Reduction in Rates for Delivering Hood River and Mosier Apples

Another six and seven cents per hundredweight has been clipped off the cost of delivering Hood River and Mosier apples to Arizona markets as a result of the efforts of the Traffic Department of the Northwestern Fruit Exchange. The rates from Hood River, Mosier and The Dalles to Bisbee and Douglas, Arizona, respectively, of \$1.15 and \$1.17 per hundredweight, have been reduced by the interested carriers, effective May 31, 1916, to \$1.09 per hundredweight from Hood River and \$1.10 per hundredweight from Mosier and The Dalles. Mr. Robinson, Traffic Manager of the Exchange, says: "We called the attention of the carriers to the fact that the published through rate, which necessarily was the lawful rate in use, was in excess of the sums of local rates and should be accordingly reduced. The carriers were quite willing to make the change and did so promptly. This means a saving of from three to three and a half cents per box, or from \$18.71 to \$21.83 per car to the growers in the districts mentioned, and will help to pay their advertising bills in developing new markets in Arizona and other states."

FOR STRAWBERRY RESULTS

You must use a fertilizer that has demonstrated that it makes good. Strawberry growers who have used

"Beaver Brand" Animal Fertilizer

know that our claims for this famous fertilizer are not based on theory but on facts.

One Grower Reports:

1st year, without fertilizer, 150 crates per acre.
2nd year, fertilizer applied, 175 crates per acre.
3rd year, fertilizer applied, 192 crates per acre.

Whether you have one acre or a hundred, you should *prepare now* for next year and apply to your ground before fall. You will have an *increased quality and quantity* crop.

"Beaver Brand" Animal Fertilizer

for Strawberries, as made by the Union Meat Company, contains the proper amount of nitrogen, phosphoric acid and potash to supply your soil with the necessary plant food.

Address Box 101 for free information folder and ask for the names of those who know what this famous fertilizer will do.

Our representative will be in Hood River in August. Dates will be announced in the Hood River newspapers. Arrange to meet him.

UNION MEAT COMPANY

North Portland, Oregon

MYERS POWER PUMPS
ARE USED ON THOUSANDS OF FARMS

Have you ever felt the need of better water facilities? If you have become tired pumping and carrying water, or you need more water than your hand pump can supply, install a MYERS POWER PUMP and put your gasoline engine to work—Have a Power Water Plant that is self-contained, economical and satisfactory, and that will furnish plenty of water for every purpose—for your home and surrounding buildings, for watering stock, sprinkling lawns, fighting fires, etc.

YOUR GASOLINE ENGINE ANY STYLE WILL OPERATE A MYERS BULLDOZER POWER PUMP SATISFACTORILY

MYERS POWER PUMPS are built in many styles and sizes for deep and shallow wells—capacities from 300 to 1200 gallons per hour—operation by gasoline engine, motor or other power. Can be installed by an ordinary mechanic. Are simply constructed, easy to operate and cost of upkeep is low. For use wherever water is used in quantity. If interested in better water facilities, write today. Catalog and information free.

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Cleaner spark plugs

Your spark plugs will keep cleaner if you use a straight-distilled, refinery gasoline. A mixed or imperfectly refined gasoline breaks up and deposits carbon instead of exploding completely.

Red Crown

the Gasoline of Quality

is the all-refinery gasoline—not a mixture.

DEALERS EVERYWHERE AND AT OUR SERVICE STATIONS

STANDARD OIL COMPANY
(California)



Nitrate for the Orchardist

A few years ago some experiments were conducted by Professors Ballard and Volek at Watsonville, California, using nitrate on an orchard which had bloomed pretty regularly but failed to set fruit. The results were very gratifying. Since then nitrate has been tried by orchardists in various other districts by both applying the crystals to the ground and cultivating them in. Splendid yields have been obtained where checked trees set very little fruit, and also in addition to this the foliage has become healthy, vigorous and green. According to all experiments where nitrate has been used early in the spring, about March 1st in the Northwest, a much improved set of fruit has occurred. It is believed by a great many that nitrate applied in July, late summer and early fall, during the time the fruit buds are forming, will be very helpful in making vigorous fruit buds for the following year. The idea is new but the suggestion is worthy of a good, fair trial by orchardists who are not getting satisfactory yields.

The Fruit Industry Paraphrased

The Dri-Fresh Evaporator Company of The Dalles, Oregon, turned out a fine product last year and expect to do a largely increased business during the year 1916.

The apricot crop of California will probably amount to 250 cars.

The shipment of Sacramento cherries began by express the third week in April.

Colorado estimates the Western Slope fruit crop at 3705 cars. In 1914 the crop was 4407 cars.

The peach crop in Georgia is estimated at about 3500 cars. Maryland and Connecticut report about half a crop.

The first car of California cherries arrived on the New York market May 5th, being sold by Connolly Auction Company.

One fruit dealer says the American growers are optimistic, almost fatalists. Anything like preparedness they think unnecessary.

The Canadian Pacific Railway for dining cars, hotels and steamship service purchased over \$10,000,000 worth of fruit from the Western Provinces.

The first straight car by express of California cherries, containing 2285 packages, was sold at Greenes Fruit and Auction Company, Chicago, by Mr. Charles Irregang for \$5400.

\$500,000 worth of apples were destroyed in the State of Washington in 1915 by the codling moth, according to a report by Mr. T. O. Morrison, in charge of the Department of Horticulture, Olympia.

Go East This Summer

via The Scenic Highway

Low Round Trip Fares

To Middle West and the Eastern States and Canada Daily



Two Thru Trains

Each Day

To Chicago

via Minneapolis and St. Paul

One to St. Louis

Low Park Fares

To and thru Yellowstone Park

June 15 to Sept. 15

To California

Have your ticket read via Portland and G. N. P. S. Co. new, fast, palatial steamships

ASK YOUR LOCAL AGENT, OR WRITE
A. D. CHARLTON, A. G. P. A., PORTLAND, OREGON

The Fruit Industry Paragrapghed

The White Salmon Valley Fruit Growers' Union and the Underwood Fruit Growers' Union have merged under the title of the White Salmon Valley Fruit Growers' Association, with Paul McKercher as president and Ira E. Hyde as manager.

It is stated that the Newberg Co-Operative Association has become the property of A. Rupert & Co. of Portland. The association comprises a membership of some 350 growers. This district grows prunes and berries extensively and other fruits in moderate proportion.

Kennewick, Washington, sold the first crate of strawberries for sixteen dollars. It is too bad that every crate of strawberries could not be the first crate. The variety grown extensively in Kennewick is the Clark Seedling. The prices have been very good during the shipping season.

Yakima Valley believes in uniformity of pack. The present interest indicates strongly that Yakima will put up a uniform, dependable pack this season, surpassing any past season's efforts.

The potato growers of Yakima Valley believe in organization and co-operation and hope to have a strong association.

SUPERINTENDENT

Soon open for engagement. Very large orchard or farm preferred. Years of experience; practical and technical. Shaping up new or run-down propositions a specialty. Address G. F. W., care "Better Fruit."

Wanted

Position as foreman or superintendent on a fruit or general farm by young married man; agricultural college graduate; experienced on both fruit and dairy farms. Strictly temperate; good references.

Address R. W. M.,
2219 H. Street Bellingham, Washington

FRUIT GROWERS Dehydrate Your By-Products

It gives you a high grade quick selling product at a minimum cost. It makes a clean and natural tasting product. Dehydrated fruits and vegetables have been approved by the U. S. Government, while desiccated, dried and evaporated products have been rejected. There is but one Dehydrator manufactured in the West and it is the **best By-Product machine ever devised**. It is adapted to the individual grower, as it can be constructed to meet any and all requirements. It is fully covered by U. S. patents. Therefore, you are protected in its use.

The manufacturers of this Dehydrator have recently patented new and improved automatic labor-saving preparatory machinery which will further reduce the present low cost for the production of this product.

For new descriptive booklet address

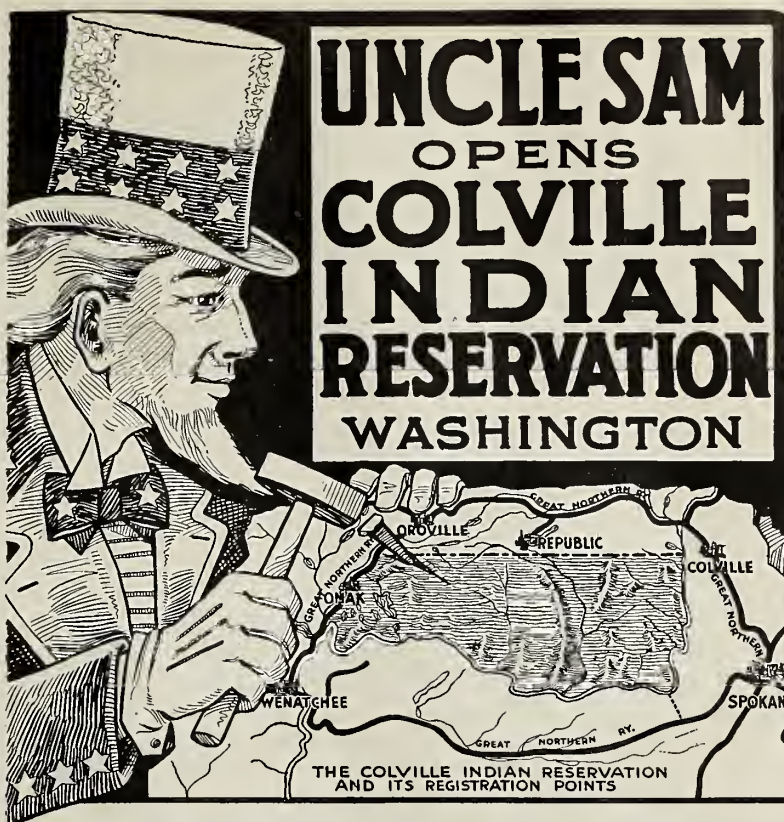
LUTHER MANUFACTURING CO.
San Francisco, California

Italian Bees and Queens

Write for circular to

IRA C. SMITH
DUNDEE, OREGON

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



"Go Great Northern"—on Fare-and-a-third Lake Chelan Tickets—and Register at Wenatchee or Omak—July 5th to 22nd, inclusive

350,000 acres of desirable agricultural lands of the south half of the COLVILLE Indian Reservation—located in the Columbia River and Okanogan Valleys of North-Central Washington—will be subject to homestead entry. "Go Great Northern" and take advantage of very low Lake Chelan fares—approximately a fare-and-a-third for the round trip and good for stopover for registration at Wenatchee—on sale daily from all Great Northern stations in British Columbia, Oregon, Washington and Idaho. If you like, at Chelan Station, you may rebuy to the registration town of Omak and back, directly at the Reservation. Great Northern Round Trip Summer Tourist Fares East during the registration period permit stopover for registration at Wenatchee or Spokane; also at Glacier National Park.

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Fill out coupon below and mail today, for detailed information, map folders and booklets.

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Western Immigration Agent Assistant Traffic Manager Asst. Gen'l Pass'r Agent
SEATTLE SEATTLE SEATTLE



C. W. MELDRUM, ASSISTANT GENERAL PASSENGER AGENT
GREAT NORTHERN RAILWAY, SEATTLE, WASH.
Send Colville Map Folder.

Name.....
Address.....

It is believed by some that the present pint used in packing strawberries is reducing the quantity of berries that are canned for domestic purposes, therefore some growers are advocating returning to the quart boxes.

Yakima reported on hand 150 cars of apples on April 28th. The demand for apples is pretty light in May and June, these two months being the lowest months for consumption of the year.

Puyallup Valley reports that many Evergreen blackberry and raspberry canes were damaged by frost.

Information from the Yakima Valley states that The California Fruit Distributors will enter the Yakima Valley, opening an office in charge of Mr. F. W. Means. It is stated that the business will be conducted under the name of the Producers' Fruit Company.

Box Nailing Machines

1 No. 5 Morgan, \$210

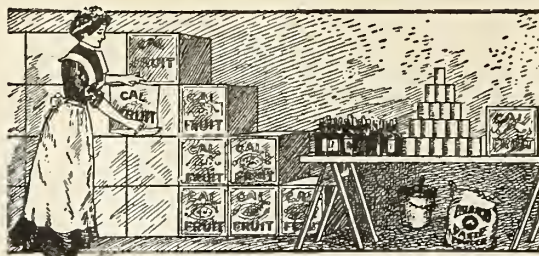
2 No. 8 Morgans, \$260 and \$275 each

NORTHWEST LEAD & MACHINERY CO.
311 Front Street, Portland, Oregon

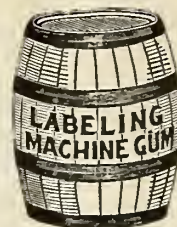
WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



PASTE



GUM



PICK UP GUM, for use on Knapp labeling machines (very adhesive)
CEMENT, for use on Burt labeling machines. **LABELING GUM**, for use on all bottle labeling machines.
CELLULOID TIN LABELING PASTE, a RUST proof tin labeling paste.
TRANSPARENT PASTE, for bottle or jar labeling.

PALO ALTO PASTE POWDER—three pounds added to cold water makes two gallons fine white paste for all labeling work, or a RIBBON paste for labeling machines. Extensively used by canners and fruit packers.

Robinson Chemical Works

Manufacturers of Paste and Adhesives for All Purposes
 Office: 351 Eighth Street, San Francisco

By-Products and Principal Products of Fruit Business


Leon D. Batchelor, of University of California Citrus Experiment Station, Riverside, before Utah Farmers' Convention, January 28, 1916

BY-PRODUCTS are defined by the Dictionary of Political Economy as "those materials which in the cultivation or manufacture of any given commodity remain over, and which possess or can be brought to possess a market value of their own." By common usage, however, the term "by-product" has come to be used in speaking of any of the manufactured fruit products, as jams, jellies, canned fruit, and even evaporated fruit. This is an erroneous use of the term in many

cases, and has led to a misunderstanding of its importance, for frequently the products of a fruit section are spoken of as by-products simply because they are canned or preserved in some way, but are in fact the principal product and not a by-product.

During the past two years writers have frequently referred to California as an example of the successful development of fruit by-product industries. In most cases this has been rather misleading, due to the loose usage of terms, for the extensive canning and evaporating industries which have grown up in that state have been developed as the principal means of marketing the fruit. It is true, of course, that curing fruit does, to a limited extent, save from loss fruit for which shippers and canners are not at the time paying profitable prices, and it is also true that the recourse to curing frees growers from helpless dependence upon fresh-fruit buyers. But this does not mean that curing is a way of getting something from refuse fruit, not suited for other purposes. It should be taken as evidence that, for the most part, grades of fruit which are preserved are the same which are also available for shipping and canning when prices are right. It is very important in many ways to have it clearly understood that, except to an insignificant extent, California fruit drying is not undertaken to save wastes or to get something from fruit which is not suited to higher uses. The obligations upon producers, to make their output worthy of a high standing, has extended to the whole process of growing. The fruit must be well grown with the added excellence of being somewhat more mature than for shipping purposes, because it is not required to stand hauling and storage. It must, however, be carefully handled to escape bruising because discolorations are blemishes.

The great success of California in the production of cured fruit lies chiefly in the favorable climatic conditions which prevail during the harvesting period. There are many parts of the world where good fruit is grown, but there are very few sections where conditions producing such fruit continue to accomplish its preservation. California's cured and canned deciduous




For Greatest Satisfaction Use
DOUBLE SERVICE
Automobile Tires
Guaranteed 7,000 Miles Service
Absolutely Punctureproof

Double Service Tires are made double the thickness of the best standard make tires. This 100% greater wearing surface naturally gives that much more mileage and service. The average of 12 miles of tough fabric and one inch surface tread rubber makes these tires absolutely punctureproof. These tires excel all others for use in the country over rough and rugged roads as well as on hard pavements. They are as easy riding and resilient as any other pneumatic tire—the air space and pressure being the same. They are the most economical and "care free" tires made and are used where tires must be depended on and tire troubles cannot be tolerated. Many Double Service style tires are in use in the U. S. government and European War service. Our output is limited to a certain amount, but for a short time we offer the following reduced special prices as an Introductory Offer:

Tires Tubes		Tires Tubes	
80x3 in.	\$ 8.60 \$2.20	36x4 in.	\$17.45 \$4.65
80x3 1/2 in.	10.85 3.10	36x4 1/4 in.	21.20 5.60
82x3 1/2 in.	12.75 3.20	36x4 1/2 in.	22.50 6.75
83x4 in.	16.75 4.20	37x4 1/2 in.	23.00 6.20
84x4 in.	16.70 4.55	37x5 in.	25.50 6.60

All other sizes not included in above list also furnished. Non-skids at 10% additional. Terms: Payment with order at above special prices, a 10% discount allowed on orders for two or more tires. All personal checks must be certified. Try these tires now and be convinced of their very high qualities. Sold direct to the consumer only. Descriptive folder upon request. Write for it.

Double Service Tire & Rubber Co., Akron, O.
 Dept. B.F.



PORTLAND-SAN FRANCISCO

ROUND TRIP

\$32.00

Daily to July 31
 Includes Meals and Berth at Sea

THE NORTH BANK ROAD

SS. Great Northern and Northern Pacific

EVERY
Tuesday, Thursday, Saturday

Through sleeping cars to Flavel Dock from Tacoma, Seattle and Vancouver, B. C., via Great Northern and Northern Pacific Rys.


Go East during the special Round Trip Summer Fares.

Direct or one way through California. Stopovers each way.

Vacation rates to Clatsop Beach, the favorite Northwest Seashore Resort.

**Portland Ticket Office, Fifth and Stark
 Spokane, Davenport Hotel**

R. H. CROZIER, Asst. Gen. Pass. Agent



fruit amounted to seventy-one per cent of the total valuation of deciduous fruit produced in the state, according to the last census. Only in regions having a sufficiently warm and dry climate, as Greece, Turkey, parts of France, Spain and California is sun curing of fruit practiced on a commercial scale. Fruit may also be cured in drying devices known as evaporators; in which case the product is known as evaporated fruit, while the sun-cured fruit is usually spoken of as dried fruit. About three-fourths of the cured fruit produced in this country is sun dried and probably always will be, for the only limitation to the curing is the number of acres of sunshine in the favored sections of the arid states. Drying, therefore, is a more economical process of curing than evaporation.

The second great fruit canning and curing state is New York, and a brief consideration of apple evaporation in this state may be of interest at this time. This industry approaches more nearly the by-product side of the fruit business than most fruit-preserving industries. In writing on this subject, in BETTER FRUIT, Mr. D. W. Seely of Sodus Point, Wayne County, New York, writes as follows: "Until recent years in Wayne County, New York, practically everything was dried, and this made a very fine grade of evaporated fruit which commanded a big price, and still does." It is interesting to note further in Mr. Seely's discussion that the growers actually received for their crop during the year 1912, from 30 to 35 cents per hundred. The apples evaporated down to about thirteen pounds per hundred on the average and sold for six cents per pound. In speaking of an evaporator with a ninety bushel daily capacity the same authority quotes the following interesting figures:

Cost of 90 bushels of apples.....	\$15.00
Cost of evaporation, including labor, fuel, sulphur and overseeing	12.00
	<hr/> \$27.00

575 lbs. of evaporated apples at 6 cents;	
about 280 lbs. of waste at 95%.....	\$37.80
Net profit in handling 90 bushels apples (not considering taxes, depreciation and interest on dryer), one day's run...	10.00

Under the assumption of a plant of this size being owned by a non-profit co-operative association the growers would have received 27.8 cents per bushel for their apples instead of about 16.5 cents per bushel, or \$6.60 per ton selling to the evaporator.

The writer is not aware of any summarization of the operative costs in a large number of factories. The above account, however, was written as typical of the largest evaporated apple area in the United States. Again, wholesale prices fluctuate both above and below the rate (6 cents per pound) hertofore mentioned. At present the highest grades of evaporated apples are quoted from 6½ to 7½ cents per pound in the San Francisco markets, while last summer the figures fell to about 5 cents per pound. The latest reports from New York show that in a ten-year average, growers received for apples that went jointly to evaporators and vinegar plants \$10 per ton.

Ridley, Houlding & Co.

COVENT GARDEN, LONDON

Points to remember when consigning
apples to the London Market

1.—We Specialize in Apples

2.—All Consignments Receive our
Personal Attention

3.—The Fruit is Sold by
Private Treaty

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Unexcelled facilities for the production of Catalogues, Booklets, Stationery, Posters and Advertising Matter. Write us for prices and specifications. Out-of-town orders executed promptly and accurately. We print BETTER FRUIT.

CORNER FIRST AND OAK STREETS
PORTLAND, OREGON

New York is the greatest of all apple-producing districts and produces more dried apples for export than any other state, and if this section of the country is to compete with them in the foreign markets, probabilities are that we are not likely to receive a price in excess of \$10 per ton. It should be observed here that the grades of fruit acceptable for curing do not correspond to the so-called culls of the Western States region, but approach more nearly "C" and Fancy grades. Taking apples as an example, such fruit as that which has been shipped in bags or loose to Southern cotton states would be the lowest grades fit for curing. Partly



GRADERS

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Information

Western Fruit
Grader & Mfg.
Co.
Grand Junction
Colorado

SECOND SEASON Send to Holland with Me

For Hyacinths, Tulips, Narcissus, Crocus, Iris,
Paeonias and other DUTCH BULBS.

Save 25% to 50%

Write for details and price list.
N. B.—Order mailed August 1st.

C. G. EHLE (Box F) MULTNOMAH, OREGON

TOP DRESS all your Crops with **Nitrate of Soda** alone, no matter what other fertilizers you may have used. 100 pounds to the acre for seeded, and 200 pounds to the acre for cultivated crops will do the work. The increase will yield large profits over the cost.

Write on post card for our money making books

WILLIAM S. MYERS, Director
25 Madison Avenue, New York

AN ENGINE BOOK WITH A PUNCH

Would you build a house with a foundation like this? Would an iron kettle hold water better if the bottom were cut off and patched on again like this?

No! Then write for this new book.

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decayed, wormy and badly-bruised apples are unsatisfactory for the purpose, making only the low grades of evaporated stock known as waste and chops. These low grades are quoted at present in the Rochester, New York, markets (Fruit and Produce Marketer, page 9, January 6, 1916) at from 2 3/4 to 3 1/4 cents per pound. With the cost of evaporation at about 2 cents per pound of evaporated fruit, and from 12 to 15 pounds of cured fruit per 100 pounds of green fruit, such low-grade apples would only net about 12 to 15 cents per hundred, if the growers owned their own evaporators. It is only the good-to-medium grades of fresh fruit which will bring the top prices as cured fruit. This class includes medium-sized, poorly-colored, limbrubbed, lop-sided and slightly-bruised fruit, but practically sound and edible when received at the factory or dryer. This is much the same type of fruit demanded for canning, and at about the same prices as quoted for canning purposes.

Turning now to the lowest grade or cull fruit, there are several possibilities for its disposal; it may be made into vinegar, denatured alcohol, or used as stock feed. The prices usually realized for vinegar apples, of from \$2 to \$5 per ton, may not warrant their special harvest during the rush season of picking and packing the higher-grade fruit. The culls which come from the orchard to the packing house, however, mixed with better fruit, might be profitably utilized for vinegar purposes inasmuch as they have already been harvested and assembled at a central point. A portion of this fruit usually is even adapted to evaporation or canning, so the average value to the grower might approach \$5 to \$8 per ton, providing it could be handled through a non-profit co-operative fruit-growers' association. Even with low-grade fruit which reaches the packing houses taken care of, there are still many tons remaining on the ground in the average orchard which should be utilized as stock feed, and here lies the most practical disposition of most of the real waste fruit of the orchard, unless denatured alcohol enterprises are established to consume such fruit at prices paying something more than cost of handling.

In considering the value of the several fruits compared to grain and hay as stock feed, the accompanying table, prepared by Professor Jaffa of the University of California, is interesting.

100 POUNDS FRUIT EQUIVALENT TO POUNDS FOR

	Wheat Straw	Alfalfa Hay	Oat Hay	Corn	Barley	Oats	Wheat	Wheat Bran	Wheat Mid- dlings	Rice Bran	Cotton- seed Meal	Cocoa- nut Cake Meal
Fresh Fruits												
Apples	34	20	24	15	15	17	16	18	16	13	9	13
Oranges	33	19	23	14	14	16	15	17	15	12	8	12
Pears	40	23	30	17	18	20	19	20	19	15	11	15
Plums	50	30	36	22	24	25	24	26	24	20	11	20
Prunes	46	27	33	20	22	23	22	24	22	18	13	18
Apricots	40	23	29	17	18	20	19	20	19	15	11	15
Nectarines	43	26	30	19	20	22	21	23	21	17	12	17
Figs	50	30	37	23	24	26	25	27	25	20	14	20
Grapes	50	30	37	23	24	26	25	27	25	20	14	20
Watermelons	22	13	16	10	10	11	11	12	11	8	6	8
Nutmeg melons	19	11	13	8	9	9	9	10	9	7	5	7
Dried Fruits												
Dried prunes	175	104	125	78	82	88	84	92	84	67	48	68
Dried apricots	194	115	138	86	90	97	93	102	93	74	53	76
Dried peaches	190	113	135	85	88	95	91	100	91	72	51	74
Dried figs	186	110	132	83	85	93	89	97	89	71	50	72
Raisins	216	128	153	97	100	108	103	111	103	82	59	84

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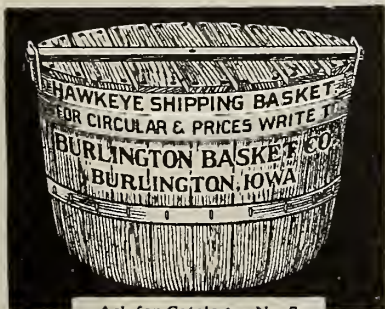
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Of course these valuations must be accorded some latitude, as they are based on averages. Certain varieties of the sweet and ripe apples may contain more nutrition than the more acid or immature fruit, and similar variations will be met with in considering the hays and grains. Likewise the comparisons are not based on exact equivalents of carbohydrates, proteins, etc., but the table nevertheless serves as a upseful guide in pointing out the value of certain fruits as good for farm animals. Their value may be further diminished or increased, depending on the materials fed with the fruit.

The following experiences cited from Henry's "Feeds and Feeding" (Eleventh edition, page 195) throws additional light on the value of apples as a stock feed: "Withycombe of the Oregon Station fed three shoats all the apples they would eat, 897 pounds of apples producing 38 pounds of gain in 14 days. During the second period of 15 days, 1,119 pounds of apples gave only 3 pounds of gain. In another trial lasting 79 days 3 sows showed a gain of 36 pounds, or 1 pound of increase for each 64 pounds of apples fed. Clark of the Utah Station found that: 'Apples fed to pigs in two experiments with skim milk and shorts had a value ranging from nothing to 18 cents per hundredweight. In one trial apples were only equal to grass pasture.' From trials with dairy cows at the Vermont Station, Hills concludes that apples have about 40 per cent of the feeding value of corn silage. Lindsey of the Massachusetts (Hatch) Station concluded that 4 pounds of apple pomace equals 1 pound of good hay for cows. From 15 to 30 pounds of pomace may be fed daily to cows with advantage." Many fruitgrowers are producing hogs in the orchard with little or no grain up to the fattening period. This is especially practical in the irrigated regions where a portion of the orchard can be kept in alfalfa sod. By rotation of the alfalfa portion of the orchard sufficient hog feed can be produced to balance the fruit ration and not lower the production of the orchard. There is, in fact, a decided leaning toward cover crops and periods of sod rotation in many of the orchard sections of the West, regardless of the hog and by-product question.

In closing, we should keep in mind that the peach and apricot drying and canning of California, or the prune-evaporation industry of both Oregon and California, are the preparation of fruit for market as a principal product and not as a by-product. Such industries are making use of the best grades of fruit possible to grow and the Western fruitgrower should not necessarily consider the California peaches and apricots, or the New York jams and jellies seen in the grocery store as by-products, in the majority of cases, for the fruit was far from being cull fruit, but rather was very probably the equal of the best grades of fresh fruit grown in the country and produced especially for preserving. If the importation of manufactured fruit prod-

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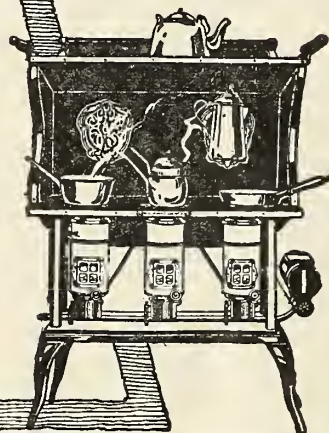
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ucts is to be diminished by home production, equally as good grades of preserved fruits must be put up, and a constant supply of such. Much of the success of establishing a brand of canned or dried fruit depends on its continued appearance on the market. This cannot be kept up unless the factory can be assured of suitable fruit far in advance of the preserving season; this can hardly be accomplished if the growers are gambling on the fresh-fruit market with intentions of turning to the factory at the last minute if market conditions are unfavorable. The fruit-preserving industry, where it is carried on most successfully, is not a catch-all for unsalable fruit, a place where culls are converted by some magic power into first-class products, it is not a means of saving bad fruit, but rather a means by which good fruit is prevented from becoming bad. These facts should in nowise discourage the fruitgrower of the Western States in the establishment of fruit-preservation factories. After a thorough trial of selling the fresh fruit, especially the stone fruits, to the general markets it may be proven that the sale of such fruit as a processed article would have been more profitable. If such condition should prevail it seems reasonable, however, from the experience of other regions that the chances of success of such factories may be greatly increased as the product of the industry becomes more of a principal product and less of a by-product.

The Fruit Industry Paraphrased

Loganberry Juice Advancing.—On account of the popular demand, which is increasing, for loganberry juice, the present stocks are scarce, therefore on July 1st the price will be increased 25 cents per case. At present 14-ounce cases sell at \$5.00, 16-ounce cases at \$4.50 and one-quart cases at \$4.00. The loganberry has made its way more rapidly into popularity in the last year through loganberry juice and loganberry pies than any other fruit in the same length of time.

* * *

The International Apple Shippers' Association will meet in New York City during the month of August. Some mighty interesting information should be obtainable as a result of the deliberations, not only in reference to the quantity of apples to be handled this year, but as to the best methods to be used to sell them to the best advantage.

* * *

The Walla Walla, Washington, Gardeners' Association commenced early in May with a membership of 95 and headquarters in Walla Walla. Even the gardeners believe in association work and are finding co-operation a necessity.

* * *

The Spokane Fruit Growers' Company will undertake this year to take a tree census of the number and age of all trees and varieties in every orchard. Special blanks will be used for this purpose.

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"Without the use of dynamite in tree-planting," says U. S. Bulletin No. 38, "the roots soon meet with the smooth and compacted sides of the hole, through which they have great difficulty in penetrating. The tree is in about the same situation as if it had been planted in a large tub."

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the trees will grow faster, develop deeper, stronger roots, and bear earlier. "When dynamite is used," continues the bulletin, "cracks are formed in the soil to distances of five or sometimes six feet on all sides. This makes the very best conditions for the continued growth of the tree. For tree planting dynamite is recommended confidently as the best method of preparing the soil."

In selecting explosives for your orchard work, be careful to get those that will crack, pulverize and loosen the soil for several feet in every direction, rather than pack it or throw it in the air. The proper explosives are the Giant Farm Powders. There are two of these—Eureka Stumping Powder and Giant Stumping Powder—both *improved forms* of dynamite.

Fruit growers in all of the Western States use many tons of Giant Farm Powders every year. They have found that they do better work because they are made especially to suit *western* farm conditions and because they are always uniform in composition and action.

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He believes in utter simplicity—in a car almost trouble-proof.

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He has certainly come closer to a lifetime car than anyone else ever did.

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